

# **2008 ACTION PLAN TO IMPROVE CHILDREN'S ENVIRONMENTAL HEALTH IN ARIZONA**



**ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY  
OFFICE OF CHILDREN'S ENVIRONMENTAL HEALTH**

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## ARIZONA CHILDREN'S ENVIRONMENTAL HEALTH ACTION PLAN

In April 2003 the Arizona Department of Environmental Quality (ADEQ) initiated the Children's Environmental Health Project (CEH) in response to a directive by Governor Napolitano to take the lead in improving environmental health conditions for Arizona's children. ADEQ issued its first Action Plan to Improve Children's Environmental Health in Arizona in January 2004 which established initial goals and action items for the CEH Project. In 2007 the Director of ADEQ established the Office of CEH in order to further emphasize the importance of children's health within the agency.

This 2008 Action Plan continues and develops further many of the items outlined in previous Action Plans. In addition, this 2008 Action Plan continues to call for: (1) continuing to focus on air quality health risks for children, especially asthma; (2) increasing efforts to coordinate and collaborate with all appropriate state agencies and other organizations to maximize resources needed to reduce environmental risks to children's health; (3) undertaking projects for the prevention and remediation of environmental risks for children living near the Arizona/Mexico border, and (4) emphasizing effective outreach, education and communications in all Children's Environmental Health activities.

### **The CEH Mission**

Led by ADEQ, the Office's mission is to develop and implement practical ways to protect Arizona's children from environmental risk exposures. ADEQ works closely with the Arizona Department of Health Services and other state agencies to achieve the office's mission. Working together, these agencies play important roles in identifying and reducing children's risk exposures in Arizona.

### **Environmental Risks**

Children may face environmental risks to their health from contaminants in air, water, food, and soil. Moreover, children often face multiple exposures in these different media. Asthma, air pollution, pesticides, mercury and lead are some of the specific environmental factors forming the foundation for this Action Plan. A brief description of environmental risks addressed by ADEQ's Office of CEH is as follows:

- **Asthma**, a respiratory disease, is the most common chronic disease in children. Nationally, it affects more than 20 million people including six million children. Asthma is the most frequently reported childhood chronic disease in Arizona. This disease's rates are higher in Arizona than almost every other state. Environmental factors are believed to significantly contribute to the development of asthma or trigger asthma attacks. Asthma attacks are also the leading cause of school absences among Arizona school children.
- **Air Pollution** Children are especially susceptible to the adverse health effects of air pollution. Exposure to elevated levels of certain air pollutants, including

ozone and diesel exhaust, can have serious adverse effects on children's health, including asthma attacks and other respiratory ailments and learning disabilities.

- **Pesticides** are a diverse group of chemicals. Excessive exposure to pesticides can cause harmful effects in children, including damage to the nervous system, liver and kidneys. Children's diets typically include more foods treated with pesticides, which may be prevalent at schools and childcare facilities.
- **Mercury** is a heavy metal that can have harmful effects on the nervous systems of children and developing fetuses, causing developmental and learning problems. Mercury can accumulate in lakes and rivers and is transformed into methyl mercury by bacteria in soil and aquatic sediments. Methyl mercury can move up the food chain, accumulating in fish.
- **Lead** is a heavy metal used in many materials and products that can damage the brain and nervous system, resulting in lower intelligence and cause behavioral and attention problems in children when absorbed into the body at even relatively low levels. Because lead can be found in paints and water pipes in buildings constructed prior to the 1970s, children face potential lead-contaminant exposure.

### **Building on FY2007's Goals and Action Steps**

The first Children's Environmental Health Forum was held at the Arizona State Capitol in Phoenix in May 2003. Recommendations from the forum provided the foundation for subsequent actions to improve children's environmental health in Arizona. The forum emphasized the importance of collaborative efforts and brought together policy makers, state and local leaders, community agency representatives, university researchers, private research foundations, parents, teachers and community activists.

The May 2003 Forum produced several overarching consensus recommendations:

- *Strengthen the cooperation and collaboration between Arizona's health and environment agencies in protecting and improving children's environmental health.*
- *Integrate a focus on children's environmental health into ADEQ's programs and increase ADEQ's outreach activities directed at improving children's environmental health.*
- *Bring together policy makers, health care providers, researchers, educators, parents and citizens on a regular basis to develop practical approaches to protecting Arizona's children from environmental health risks.*
- *Develop community support and resources to protect children from environmental health risks in Arizona.*

- *Improve the collection, evaluation and dissemination of data on issues affecting children's environmental health in Arizona.*
- *Encourage Arizona schools, childcare and preschool facilities to play a greater role in protecting and promoting children's environmental health.*

These principles have guided ADEQ's actions in working to improve children's environmental health in Arizona.

The steps laid out in ADEQ's Action Plans are based on the recommendations from the May 2003 forum and are organized consistent with the "CARE" (Coordinate, Assess, Reduce and Educate) strategy articulated by Governor Napolitano in launching the Children's Environmental Health Project in April 2003. Accomplishments for FY2007 include:

- ***Coordinate the many interests involved with children's environmental health issues.***

Actions identified in the FY2007 Action Plan focused on bringing together the people, groups, and agencies involved with children's environmental health in Arizona. ADEQ accomplishments from the FY2007 Plan include: continued active participation in groups such as the Arizona Asthma Coalition, the Maricopa County Asthma Coalition, the American Lung Association and others.

ADEQ also continued to build a communication network with school districts, boards, officials, associations and related groups and representatives to promote environmental health in schools. An example of this communication is an ADEQ program to assist school in identifying problems with underground storage tanks and provide assistance in removing defective tanks.

- ***Assess and prioritize the environmental health factors affecting Arizona children.***

Previous Action Plans set forth several action items to help ADEQ identify, evaluate and prioritize environmental issues that may impact children in Arizona, focusing on collaboration between ADEQ, the Arizona Department of Health Services (ADHS) and the public health community. During the last fiscal year, ADEQ continued to work on a \$750,000 grant from the U. S. EPA to share and exchange hospital and emergency room admissions data and ambient air quality data between ADEQ the ADHS and Arizona State University. The exchange of data will be used to develop data analysis tools necessary to detect statistically significant correlations between increased incidences of asthma in children and poor air quality conditions, develop a model for predicting adverse impacts on childhood asthma from forecast air quality monitoring data, and publish asthma

health warnings and alerts to the general public including hospitals, emergency rooms, schools and day care centers.

ADEQ has continued to provide technical advice to schools and school districts on how to assess and address the potential risks of lead in drinking water at schools and day care centers, as a follow-up to the Lead in Drinking Water Manual prepared by ADEQ and distributed to Arizona school districts in 2004.

- ***Reduce the number and types of contaminants adversely affecting Arizona's children.***

Consistent with previous Action Plans, ADEQ has taken a number of steps to help reduce children's exposures to environmental health risks in Arizona. For example, the department developed and began implementing guidelines for reviewing permit applications or requests for plan approvals for facilities to ensure that children attending nearby schools are adequately protected from emissions or a release of hazardous materials from the facility or from vehicles transporting hazardous materials to or from the facility. ADEQ also completed the process of developing rules to regulate hazardous air pollutants in Arizona.

For the past 3 years ADEQ has managed a highly successful School Bus Idling Reduction Project to reduce children's exposure to hazardous pollutants in diesel exhaust. Key elements of the pilot program include having drivers turn off buses upon reaching a school or other location and not turn on the engine until the vehicle is ready to depart; parking buses at least 100 feet from a school air intake system; and posting appropriate signage advising drivers to limit idling near the school. By the end of FY2007, ADEQ signed up 158 school districts from every county within the state. Over 1,000 schools with some 4,740 buses carrying nearly 696,000 students currently participate in this best management practices program. In addition, recognition awards have been presented to each participating district through an annual Legislative Breakfast held at the State Capitol in partnership with the Clean Cities Coalition.

ADEQ, in cooperation with the University of Arizona (U of A), also continued implementation of combined Integrated Pest Management (IPM)/Tools for Schools programs in several schools across the state, reducing children's exposure to harmful pesticides by using non-chemical techniques to control pests and eliminate pest pathways on campuses.

ADEQ awarded \$100,000 to the Santa Cruz Valley school district to convert school buses to cleaner-burning fuels and reduce the exposure of school children in the district to harmful diesel emissions. Under the two-year program, ADEQ has helped the district reduce harmful emissions by adapting older school buses to burn a cleaner form of diesel known as ultra-low sulfur diesel fuel.

EPA awarded ADEQ an \$80,000 grant to work with the state of Sonora's Commission on Ecology and Sustainable Development (CEDES) and the U of A to encourage the adoption of Integrated Pest Management (IPM) practices in schools on both sides of the Arizona-Sonora border.

- ***Educate citizens about environmental health hazards and how to reduce children's exposure to them.***

As outlined in the FY2007 Action Plan, ADEQ has engaged in ongoing efforts to raise public awareness and education levels in Arizona relating to children's environmental health. In addition to holding a Yuma forum on children's environmental health issues during FY2007, the department has participated in a number of workshops and events and continues to work closely with ADHS, the public health community, the American Lung Association of Arizona, the Arizona Clean Cities Coalition and others to educate the public about ways to reduce children's exposure to environmental health risks.

ADEQ also partnered with the Phoenix Zoo and Bashas' food stores to conduct an Earth Month awareness campaign to focus on children's asthma and other environmental health issues. At the Earth Day events, ADEQ launched an environmental education and information website focused on the interests of Arizona youth. The Arizona EnviroKids Canyon ([www.azenvirokids.gov](http://www.azenvirokids.gov)) is a child-friendly animated site designed for elementary school-aged children, and provides environmental education through interactive games and graphics. Topics discussed on the site include water conservation, air quality, school bus idling, recycling in addition to information for parents and teachers. ADEQ will add to and update the site as the department receives feedback from the children who use it.

ADEQ, in collaboration with ADHS and other partners, has developed an education, training and outreach model to strengthen the capacity of childcare facilities to recognize and reduce environmental triggers for asthma. ADEQ will seek to implement this training in all childcare facilities throughout the state. ADEQ is in the process of working with selected childcare facilities to identify staff training, educational needs and develop and test training materials for childcare facility staff as well as ADHS facility surveyors.

Through our efforts to develop and implement an education and outreach effort in the Arizona-Sonora border region, ADEQ produced a bilingual brochure (There's Something in the Air) for distribution primarily through ADHS' STEPs to Healthier Arizona promotora network. The brochure aims to inform border residents about ambient air quality and so reduce children's exposure to environmental asthma triggers. Currently, the second phase of this Border outreach project is underway. Public service announcements are being broadcast on local border radio stations and bilingual posters have been placed along the Arizona side of border to encourage local residents to call the American Lung

Association's 7-day telephone help line which provides assistance for children with respiratory illnesses. This second phase of this outreach project should be completed in approximately two months.

ADEQ has established the Arizona Recycling Scholarship Program, which will award scholarships of \$1,000 each to five high school seniors to help pay for fees, books or tuition at a university or community college in Arizona. The program encourages Arizona students to think about how to protect our environment, while helping them meet the escalating costs of college. All Arizona high school students in their senior year are eligible to apply for the scholarships.

The ADEQ Border Team produced the bilingual annual Ambos Nogales Clean Air Calendar, which fosters youth interest in air quality and the environment through a binational student drawing contest in which the winners' artwork is featured in the calendar. In FY '07 work was started to produce a similar 2008 Clean Air Calendar for the Yuma area.

### **ACTION STEPS FOR 2008**

This Action Plan encourages continued collaboration with agencies, communities, schools, and parents working together, sharing information and maximizing resources to make Arizona a healthier place for children. The guiding principles for this year parallel those articulated in previous plans:

- *Continually assess agency resources to address environmental health risks to children.*
- *Expand outreach and communications throughout the state.*
- *Encourage schools to increase involvement in environmental health issues affecting their students.*
- *Maximize the use of community, state and federal resources.*
- *Broaden efforts in border communities, as well as Indian nations in Arizona.*

Pursuant to the CARE strategy, ADEQ has developed the following Action Steps for the 2008 fiscal year:

#### **Coordinate:**

1. Finalize an agreement between ADEQ and the Arizona School Facilities Board (ASFB) to jointly target individual school districts to promote children's environmental health considerations in the location, design and construction of schools funded by the ASFB. This includes the adoption of a new policy to site new schools away from major highways and preferably within local

neighborhoods. This effort is additionally supported by the Governor's "Smart Growth" initiative.

2. Hold a Children's Environmental Health Forum in northern Arizona.
3. Continue to participate in groups and coalitions organized to address children's environmental health, including the Arizona Public Health Association, the Center for School Excellence, the Clean Cities Coalition, the Arizona Asthma Coalition, the Maricopa County Asthma Coalition and others as appropriate.
4. Continue active participation and support for the Arizona Sonora Children's Environmental Health Task Force. The \$80,000 IPM grant to the U of A to develop a bilingual "train the trainers" program for both Arizona and Sonoran border schools will be the prime Task Force initiative.

### **Assess:**

1. Continue implementation, in partnership with ADHS and others, of the EPA grant to compile and correlate hospital admissions data with ambient air quality data to develop a model for predicting adverse impacts on childhood asthma based on forecast air quality monitoring data and an alert system to notify sensitive populations based on the model results. This work will be accomplished with the technical support of ASU.
2. Continue to provide technical advice to schools and school districts on how to assess and address the potential risks of lead in drinking water at schools and day care centers.
3. ADEQ will develop and sponsor a new recognition program to encourage and assist individual schools in becoming an Arizona Environmentally Healthy (AEH) School. This program will recognize actions taken by schools to help ensure a healthy and safe learning and teaching environment. A checklist will be used by school principals, or their designees, to certify to ADEQ that their schools have taken certain identified actions to safeguard their students, faculty, and other personnel against environmental pollutants and other potential environmental risks. If a school can certify that it meets a significant number established criteria, it will be designated as an AEH school and receive an ADEQ certificate stating that the school is environmentally healthy.
4. Collect data and conduct research to determine levels and sources of mercury in Arizona that pose potential risks to children's health.
5. Develop a Schools Water Pollution Prevention Plan. Create a best management practices approach to protect schools' water supply source from well or surface water. This project would target rural Arizona schools with outreach and technical assistance. This can be expanded in the future to include community



wide planning to protect their water source(s) through zoning and/or ordinance from potential pollution from industrial or commercial point sources.

### **Reduce:**

1. Expand the School Bus Idling Program to as many remaining districts as feasible and design and implement a process to measure the beneficial impacts of the program. With the assistance of ADHS and the Arizona Asthma Coalition, ADEQ produced a short DVD entitled “School Bus Idling Reduction Program, Creating a Healthier environment for Arizona”. This information video was sent to every district Transportation Director in the state. For those school districts not participating in this voluntary program, sign-up information was included in the transmittal package.

An additional idling reduction training DVD has been requested by the Transportation Directors. This new video is a high priority FY 2008. Many schools would also like to post “No Idling” signs at school pick-up zones to encourage parents to turn off their car engines while waiting for their children. ADEQ will explore possible sources of funding to help provide these signs.

2. Continue to implement the permit review policy for facilities near learning sites for all permit applications and requests for approval.
3. Work with the Arizona School Facilities Board (ASFB) to incorporate environmental considerations into school site selection, construction and renovation through ADEQ’s Green Schools grant.
4. Work with school districts to retrofit diesel school buses to reduce emissions and use ultra low sulfur diesel fuel. Currently, ADEQ is administering the Low Emission School bus Program which was authorized by H.B. 2591. Some \$3,177,000 in funding from the Air Quality Fund’s In Lieu Fees for diesel-powered vehicles has been made available to school districts in Non-Attainment Area A (Maricopa County) and Area B (Pima County) for retrofitting diesel-fueled school buses to help reduce particulate (PM) pollution. Additional funding is being sought from the US EPA to retrofit additional school buses within Area A.
5. Work with the state of Sonora’s Commission on Ecology and Sustainable Development (CEDES) to implement the \$80,000 grant encouraging the adoption of Integrated Pest Management (IPM) practices in schools on both sides of the Arizona-Sonora border.
6. Develop a strategy to reduce children’s exposure to sources of mercury, including items used at schools (such as mercury thermometers), as well as consumer and commercial products that contain mercury.

7. ADEQ's Tanks Division is implementing an innovative program to help schools clean up contamination from leaking underground storage tanks (USTs) on school property and help prevent future leaks. Funds from the State Assurance Fund (SAF) will be used to clean up contaminated soil and groundwater at school facilities. ADEQ will also provide technical assistance to schools ensuring that USTs are properly maintained to prevent future leakage. Currently the agency has identified 17 school districts with leaking USTs on school properties and 60 districts that own or operate tanks.
8. ADEQ's Waste Management Division will coordinate a school chemical clean-out project. The division will work with schools across the state to help develop chemical management plans that reduce the possible exposure of harmful toxic chemicals to both students and faculty.

### **Educate:**

1. Work to finalize and update the comprehensive Geographic Information System (GIS) data layer for schools and childcare facilities and make it available to the general public through the ADEQ website.
2. Conduct three training workshops for ADHS facility surveyors and beta test the education, training and outreach curriculum for the reduction of environmental asthma triggers in childcare facilities in at least three such facilities. Finally, ADEQ will identify and pursue funding opportunities to provide this training to childcare centers throughout the state.
3. Through implementation of the Asthma Air Quality grant, develop effective communications tools for providing information directly to school officials, teachers, and the health care community about air quality conditions and children's health. This includes working with the Asthma Coalition of Arizona to promote the use of color-coded flags to be displayed at schools that warn officials, parents, children and the community about high pollution days.
4. Continue distribution of the border brochure to the Arizona-Sonora border region and solicit feedback to assess the effectiveness of the outreach effort. In addition, assess the outreach effectiveness of the second phase of the project that has used radio ads and bilingual posters to advise border residents of telephone advice from the American Lung Association.
5. Continue participation in bi-national outreach efforts to encourage border school districts to retrofit diesel school buses and other diesel vehicles in Ambos Nogales and other border communities to reduce children's exposure to harmful diesel emissions.

6. Develop an education and outreach program to reduce children's exposure to mercury and mercury-containing products in Arizona.
7. Expand and update the Office of Children's Environmental Program webpage.
8. Establish an ADEQ School Curriculum Committee to develop and distribute agency environmental education material emphasizing air quality, water quality and waste management. The Committee will coordinate with various entities to obtain free environmental educational materials and work with schools and various educational boards to promote science and environmental awareness.
9. Develop an outreach strategy to inform the public about various types of wildfire or controlled burns and their health impacts from exposure to smoke. While this communication program will be community-wide the harmful impact of smoke on children's respiratory health will be highlighted.
10. Continue to interact with a wide variety of concerned stakeholders to maximize opportunities to inform them of the threat to children of environmental pollution and ways to prevent exposure. Examples of groups that we will continue to work with include: the Center for After School Excellence, the Arizona Foundation for Resource Education, the American Lung Association, the Arizona School Nurses Consortium, the East Valley Boys and Girls Club, the Arizona Public Health Association, the Arizona Department of Economic Security, the Arizona Head Start Association, the Early Childhood Health and Education Board, the Maricopa County Asthma Coalition and the Transportation Administrators of Arizona. These and other groups can significantly broaden the reach of the agency's important CEH messages.